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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,048	01/14/2004	Kevin E. Spaulding	87434RLO	4850

7590 04/20/2007  
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EXAMINER
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BAYAT, ALI

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/757,048

Applicant(s)

SPAULDING ET AL.

Examiner

Ali Bayat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 101**

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 11,12 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

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Claim 11 recites, " A computer program product which practices the method according to claim 1.

Claim 11 defines **[a computer program]** embodying functional descriptive material.

However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV).

That is, the scope of the presently claimed **[a computer program]** can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. **(A computer program stored in a computer-readable medium for causing a computer to execute the method according to claim 1)**. Any amendment to the claim should be commensurate with its corresponding disclosure. Further note claims 12 and 13 should change to **(A computer program stored in a computer-readable medium for causing a computer to execute the method according to claims 9 and 10 respectively)**.

### Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

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unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,9 and 10 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. patent 7,035,460, in view of Deguchi et al. (Pub.No. US 2005/0141848 A1).

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Claim 1 of instant Application provides for every limitation of the patent claim 1. Except for transforming the limited color gamut digital image in the particular limited color gamut color space to a reference color space forming a limited color gamut digital image in a reference color space. Deguchi et al. teaches a system in the same field of (color correction) comprising " see unit 41, performs color correction for each device to the image data R', G' and B' to which white balance processing have been performed, in accordance with data to be saved, that is to what color image device the data is to be outputted. Further note the data corrected for each output device is converted to output reference color space data such as e-sRGB or e-sYCC (correspond to limited color gamut digital image in a reference color space)" see Para.36.

It would have been obvious to modify claim 1 of instance application 10/757,048 according to Deguchi et al. to "such a problem occurs in the following case. That is, since an image picked up by a current digital camera is processed on the assumption of being observed on a CRT monitor, which fundamentally has the sRGB color space, and the image is ultimately stored in the JPEGYCC format conformable to the DCF format, as described above, the problem occurs when this image data is outputted to a color image device other than a CRT monitor, such as a color printer or a home TV." See Para.7. To solve the problem of the conventional image processing.

Claim 9 is rejected because it is unpatentable over claim 1 of U.S. patent 7,035,460, in view of Deguchi et al. (Pub. No. US 2005/0141848 A1), for the same reasons given in claim 1.

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Claim 10 of instant Application provides for every limitation of the patent claim 1. Except for applying an image enhancement algorithm to the reconstructed extended color gamut digital image. Deguchi et al. teaches a system in the same field of (color correction) comprising "note the data corrected for each output device is converted to output reference color space data such as e-sRGB or e-sYCC. Raw data is converted to scRGB 16-bit linear data, scRGB 12-bit linear data, or scYCC data, which correspond to image enhancement algorithm. See Para.36.

It would have been obvious to modify claim 10 of instance application 10/757,048 according to Deguchi et al. to "such a problem occurs in the following case. That is, since an image picked up by a current digital camera is processed on the assumption of being observed on a CRT monitor, which fundamentally has the sRGB color space, and the image is ultimately stored in the JPEGYCC format conformable to the DCF format, as described above, the problem occurs when this image data is outputted to a color image device other than a CRT monitor, such as a color printer or a home TV." See Para.7. To solve the problem of the conventional image processing.

This is an obviousness-type double patenting rejection.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher et al. (US 7,035,460) in view of Deguchi et al. (Pub. No. US 2005/0141848).

With regard to claim 1, Gallagher provided for, b) providing a modified inverse color adjustment function (Fig.1 element 63, col.6 lines 29-30) which, when such function operates on the limited color gamut digital image (Fig.1 element 32, col.6 line 43) in the reference color space (Fig.1 element 66, col.6 lines 15-20), produces the reconstructed extended color gamut digital image (Fig.1 element 66, col.6 lines 15-20) having reduced highlight color saturation for highlight color values (col.6 lines 31-340 when compared with corresponding color values of the initial extended color gamut image ( Fig.1 element 10, col.6 lines 18-19); and c) operating on the limited color gamut digital image( Fig.1 element 32, col.6 line 43) in the reference color space( Fig.1 element 66, col.6 lines 15-20) with the modified inverse color adjustment function ( Fig.1 element 63, col.6 lines 29-30) to form the reconstructed extended color gamut digital image ( Fig.1 element 66, col.6 lines 15-20) having reduced levels of color contouring and quantization artifacts ( col.6 lines 20-30). Gallagher does not specifically teach the step a) for transforming the limited color gamut digital image in the particular limited color gamut color space to a reference color space forming a limited color gamut digital image in a reference color space. Deguchi et al. teaches a system in the same field of (color correction) note "the data corrected for each output device (corresponds to limited color space such as sRGB) is converted to output reference color space data such as e-sRGB or e-sYCC (correspond to limited color gamut digital image in a reference color space)" see Para.36. One in the art would have been motivated to modify Gallagher



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according to Deguchi to ("such a problem occurs in the following case. That is, since an image picked up by a current digital camera is processed on the assumption of being observed on a CRT monitor, which fundamentally has the sRGB color space, and the image is ultimately stored in the JPEGYCC format conformable to the DCF format, as described above, the problem occurs when this image data is outputted to a color image device other than a CRT monitor, such as a color printer or a home TV." See Para.7. To solve the problem of the conventional image processing.

In regard to claim 2, Gallagher provides for a method, wherein the reference color space has an extended color gamut (Fig.1 element 66, col.6 lines 15-20) sufficient to represent limited color gamut digital images (Fig.1 element 32, col.6 line 43) stored in a set of different limited color gamut color spaces (Fig.1 element 66, col.6 lines 15-20 corresponds to different limited color gamut color spaces because of adding the modified inverse color adjustment function element 63 of Fig.1).

With regard to claim 3, Gallagher provides for a method, wherein different modified inverse color adjustment functions are used (Fig.1 element 63, col.6 lines 29-30) depending on the particular limited color gamut color space used (Fig.1 element 32, col. 7 lines 28-30, note sRGB) to represent the limited color gamut digital image (Fig.1 element 32, col. 7 lines 28-30).

As to claim 4. See the rejection of claim 1. It recites similar limitation as claim 4. Hence it is similarly analyzed and rejected.

In regard to claim 5, Gallagher provides for a method, wherein the compromise modified inverse color adjustment function (Fig.1 element 63, col.6 lines 29-30) is

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optimized to weight certain limited color gamut color spaces more highly (col.7 lines 34-36, note sRGB).

With regard to claim 6, Gallagher provides for a method, wherein the compromise modified inverse color adjustment function (Fig.1 element 63, col.6 lines 29-30) is designed so as to not substantially limit the color gamut of the limited color gamut digital images in the set of different limited color gamut color spaces (col.7 lines 44-58).

In regard to claim 7, Gallagher provides for a method, wherein the step of transforming the limited color gamut digital image (Fig.1 element 32, col. 7 lines 28-30, note sRGB) in the particular input color space (col.7 lines 28-30, note sRGB) to the reference color space (Fig.1 element 66) includes the modification of certain colors (Fig.1 element 21, col.5 lines 49-51) in the limited color gamut digital image (Fig.1 element 32) so that acceptable results can be obtained using a single modified inverse color adjustment function independent of the particular limited color gamut color space ( Fig.1 element 63, col.6 lines 29-30).

With regard to claim 8, Gallagher provides for a method, further including the step of applying an image enhancement algorithm to the reconstructed extended color gamut digital image (col.6 lines 30-36).

As to claim 9. See the rejection of claim 1. It recites similar limitations as claim 9. Hence it is similarly analyzed and rejected.

In regard to claim 10. See the rejection of claim 1. It recites similar limitations as claim 10. Except for applying an image enhancement algorithm to the reconstructed extended color gamut digital image (col.6 lines 30-36). Hence it is similarly analyzed

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and rejected.

As to claims 11-13, as best understood Gallagher provides for a computer program product (col.3 lines 65-67).

### **Contact Information**

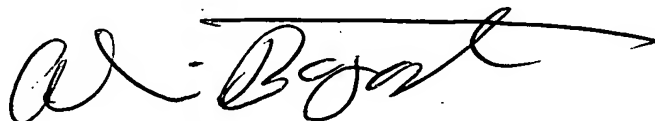
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 571-272-7444.

The examiner can normally be reached on M-F 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ali Bayat  
Patent examiner  
Division 2624

  
4/16/07